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OPPORTUNITIES FOR MAJOR IMPROVEMENTS IN SUPPORT OF DEFENSE R&D BY THE INTELLIGENCE COMMUNITY

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EXECUTIVE SUMMARY

BACKGROUND

25X1 [ ] This is an analysis of a long-standing, serious problem--poor management of scientific and technical intelligence (S&TI) production in support of Defense R&D programs. The paper describes techniques for resolving the problem and provides recommendations for putting them into practice. The objectives of the techniques are (a) to improve the quality of S&TI in support of R&D and (b) reduce costs. This summary (blue pages) contains essential information. The main body of the paper (white pages) is a more detailed technical discussion.

THE PROBLEM

25X1 [ ] The S&TI production program exceeds [ ] 25X1
in direct costs. Including collection and other indirect costs,
25X1 the total is about [ ] and involves about [ ] person- 25X1
nel. Despite the size of this effort, the individual services and agencies *manage the S&TI program largely by intuition.* There is no Community-wide system of S&TI support to R&D. This results in:

- *Wasteful Duplication of Effort: Intelligence sharing* among the agencies and services and within each service *is far below optimum.* Scarce resources are being expended by different organizations to support similar R&D efforts.

- *Linkage is Poor Between Producers and Users of S&TI:*

  - User needs are known only imperfectly by producers

  - Users have no effective means for evaluating S&TI products

  - Users do not receive much of the expensively-produced S&TI that they need

- *S&TI Program Justification is Deficient:* Congressional staffs and the Defense Audit Service are increasingly aware and critical of the traditional practice of preparing the S&TI program without documentable justification. Both know that wastage exists, since ineffective user input and evaluation result in poorly defined intelligence requirements, and production by intuition.

SOLUTION

25X1 [redacted] An intelligence support management system with community-wide applicability has been devised to solve the problems previously described in S&TI support to R&D. It has the following distinctive features:

- *It is simple, straightforward, and does not require a burdensome allocation of resources.*
- The *S&TI and R&D programs are correlated* in a rational, systematic manner to provide a valuable data base to all levels of the Intelligence and R&D Communities.
- The *data can be manipulated easily* to provide direct and uncomplicated *"sorts"* on which to *base intelligence management decisions* regarding such things as production, distribution, and improvement.
- The *user* is *directly involved,* particularly in the *requirements* and *evaluation phases* of the intelligence cycle. As a result he has an indirect, but important, impact on the production and dissemination phases as well. S&TI products are prioritized from the vantage point of the R&D user.
- The role of the *local intelligence officer* at the command or laboratory *is given balanced emphasis.* This key link is often misunderstood or ignored by intelligence managers.
- It makes the *S&TI system dynamic.* It ensures that discrete events such as statements of requirements and evaluations take place more often. *Time for response to production requests is compressed.* Management decisions for beneficial change to S&TI programs are speeded up. The system is improved constantly.

RECOMMENDATION

(U) That the DCI convene representation from CIA, DIA, and the service intelligence organizations to work out cooperative means for solving current problems in S&TI support to R&D.

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TECHNICAL DISCUSSION

INTRODUCTION

(U) *The Importance of S&TI.* Decisions concerning weapon system development are made under varying degrees of uncertainty. Failure to remove uncertainty to the degree possible can result in costly mistakes. Those in charge of military development programs need information about current and projected relevant foreign technology and threats. The manager of an R&D program wants to know from intelligence (a) what aspects of foreign technology will help his program and (b) what aspects will reduce the effectiveness of his system when deployed. If R&D managers have good S&TI they are better able to:

- Avoid technological surprise
- Achieve and maintain technological sufficiency
- Select and develop weapons at lowest possible cost.

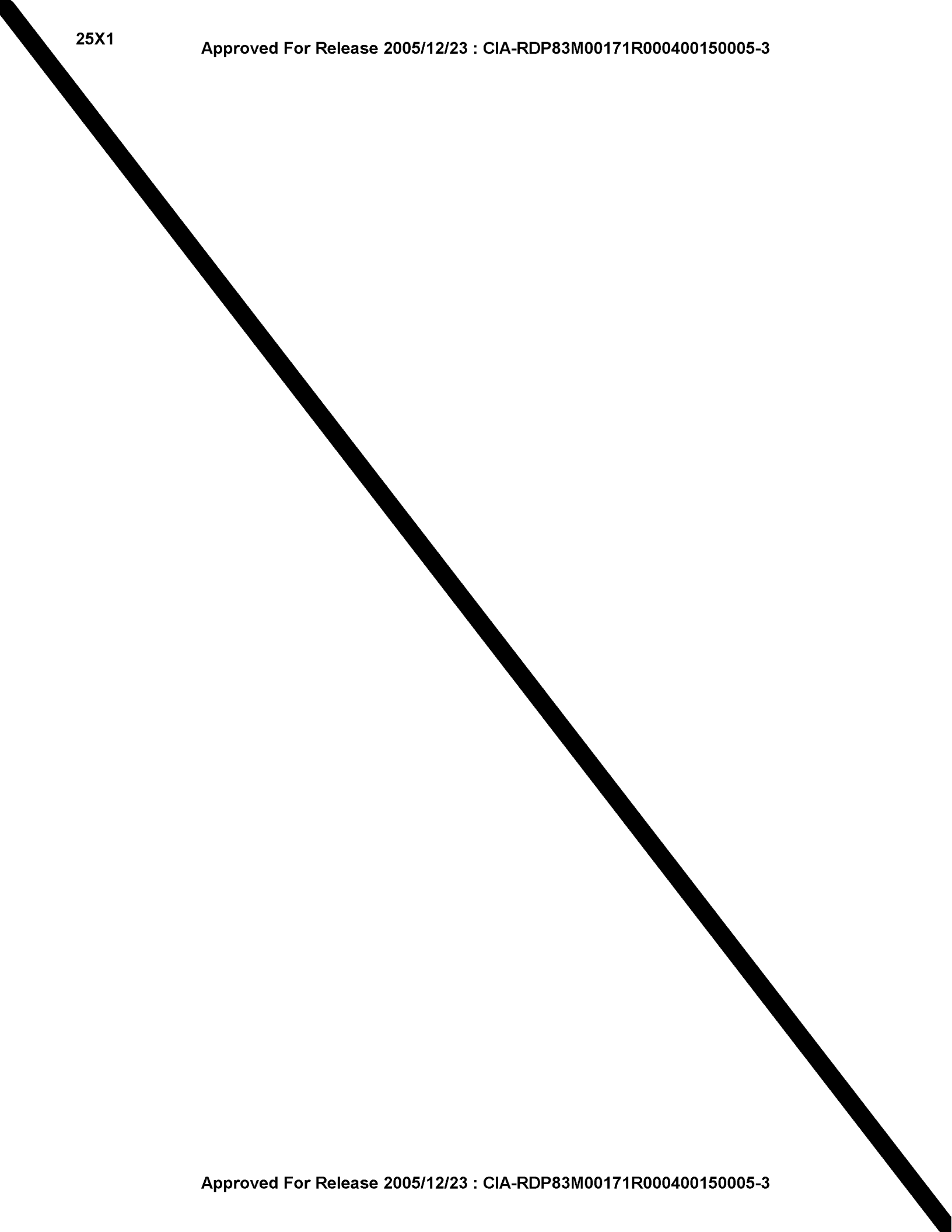
(U) It follows that the link between the R&D and the S&TI systems should be very close. If not, available S&TI will not be used. Perceptive observers have long known that since the Intelligence Community is not linked to the R&D Community in a systematic way, less than optimum use is made of S&TI.

(U) *Analysis and Study.* To prove or disprove perceptions concerning S&TI in support of R&D, study was begun in the summer
STAT of 1977 by [redacted] a specialist in this field serving on the Intelligence Community Staff on loan from the Army. He
STAT was assisted by [redacted] also a career intelligence specialist, [redacted] The balance of this paper describes the results of their efforts, with emphasis on problems identified and means for solving them. Their report was widely circulated throughout the intelligence community. Briefings have been given to key figures concerned with S&TI management.

SOLUTION

(U) The key to the solution of the problems stated in the executive summary is the existence of detailed documentation for both the R&D and S&TI programs. A system has been developed in the U.S. Army Development and Readiness Command (DARCOM) that (a) correlates the two programs, (b) involves the R&D user in the intelligence cycle, and (c) functions within existing organizational and resource constraints. This system ensures a closed producer-user loop, and has been used with excellent results. The system could be applied to the management of S&TI production by the CIA, DIA, and the services.

(U) R&D and S&TI can be viewed as *systems of projects.* In the DoD R&D program, each project is documented; that is, there is a written description of objectives, approach, milestones and the like. Table 1 shows portions of a notional Research and Technology Work Unit Summary. This summary, with other R&D documentation, provides a high level of detail on individual R&D efforts.



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(U) Less well known is the fact that *scientific and technical intelligence, too, is a system of projects.* Each project is described in terms of such things as content, producer and scheduled publication. Table 2 shows the first page of a DIA S&TI Task Sheet describing a product supportive of the R&D effort shown in Table 1.

(U) All of the DIA S&TI task sheets are assembled into one DIA document known as the Catalog of Approved Scientific and Technical Intelligence Tasks (CAST). The format of the CAST allows for easy correlation of the description of an R&D project in terms of S&TI needs with the description of S&TI projects in terms of tasks.

(U) *Preparation of Correlated Data Base.* A salient feature of an overall system for S&TI support to R&D is the systematic correlation of the two programs. This results in a data base of associated S&TI and R&D tasks. By machine manipulation of the correlated data base, it is possible to develop the information needed at the several levels of S&TI production management.

(U) It must be stressed that the preparation of a correlated data base does not pose unusual burdens on intelligence or R&D personnel at any level. Rather, it is a systematized way of carrying out certain of their existing responsibilities. Preparation of the initial correlated data base merely requires a review of the local R&D program and those portions of the S&TI program that are applicable. Thereafter, annual updates require only the entering of changes into the data bank. Since a small portion of the R&D and S&TI programs change from year to year, annual additions to and deletions from the correlated data base are not extensive.

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